University of Idaho
Pedology Laboratory
Soil and Land Resources Division, College of Agricultural and Life Sciences

Soil Series: Tekoa Gravelly Silt Loam
Pedon Number: 81-ID-0554
County: Benewah
Site Information: NRCS # 81-ID-009-4-1 to 4
Elevation: 2960 ft
Slope: 55 %
Aspect: S
Drainage: well drained
Collected by: NRCS personnel, photo no. 6-37-S

Classification: Loamy-skeletal, mixed, superactive, mesic Ultic Argixerolls
Date Described: 8/27/1981
Location: 1 mi N of River Road, W of Reeds Gulch; 600 ft W & 1200 ft S of the NE corner of Sec. 18, T. 46N., R.1E.
Landform: mountain slope, very steep
Parent Material/Geology: ash and loess over metasediments
Vegetation: DF/PP/BERE, ROSE, SYAL, PTAQ, AMAL, CARU, HODI, RUPA
Soil Temperature:
Soil Moisture:

FIELD DATA:

Lab No.	Horizon	Depth (cm)	Field Texture	Color		Structure	Consistence			Roots	Pores	Clay Films	Efferv.	Boun-dary
				Dry	Moist		Dry	Moist	Wet					
--	O1	3-1	--	Slightly decomposed needles, leaves, and twigs.										
--	O2	1-0	--	Well decomposed organic matter mixed with Mt. St. Helen's volcanic ash.										
1	A11	0-18		10YR 5/2	10YR 3/2	2vf, f gr	sh	fr	so sp	3vf &f, 2m,&1c	2vf&f ,1m t, int.		eo	gw
2	A12	18-30		10YR 5/4	10YR 3/3	1f,m, sbk-1fgr	sh	fr	so sp	3vf &f, 2m&c	2vf &f,1m t, int.		eo	cw
3	B21t	30-48		10YR 5/4	10YR 3/4	1f,m sbk	sh	fi	ss sp	2vf ,1f &, m	2vf &f t	1t,1thpo	eo	gw
4	B22t	48-76		10YR 5/2	10YR 3/4	2f,m sbk	h	fi	ss sp	2vf ,1f &, m	2vf &f t	3t,2thpo	eo	cw
--	Cr	76+	--	Weathered shale (metasediments)										

PHYSICAL DATA:

Lab No.	Particle Size Distribution (mm) – Sand						Silt	Clay	Textural Class	Coarse Fragments[1]	Bulk Density	Water Content		LOI
	VC	C	M	F	VF	Total	Total	Total		(>2 mm)	(Oven-dry)	33 kPa	1500 kPa	(400 °C) OM
	(2.0-1.0)	(1.0-0.5)	(0.5-0.25)	(0.25-0.1)	0.1-0.05)	(2.0-0.05)	(0.05-0.002)	(<0.002)						
	---------- % ----------						%	%		W%	g/cc	----- % -----		%
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1	1.71	1.41	1.91	5.37	6.74	17.14	66.94	15.92	grsil	49		40.5	12.7	
2	1.01	1.01	1.50	4.54	9.36	17.43	66.99	15.58	vgrsil	52		33.6	10.5	
3	0.31	0.82	1.26	5.56	7.84	15.78	67.83	16.39	grsil	39		30.2	9.6	
4	0.37	0.66	1.03	2.51	10.32	14.91	67.30	17.79	grsil	48		26.6	13.5	
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CHEMICAL DATA:

Lab No.	pH 1:5	pH Sat.	pH NaF	Elec Cond	Avail.[2] P	$NH_4OAc_{pH\ 7}$ Exchangeable Cations[3]				Exch. H^+	KCl-Ext. Al^{3+}	$CEC_{pH\ 7}$	ECEC[4]	Base[5] Sat.	ESP[6]	Org. C	N	C:N
						Ca^{2+}	Mg^{2+}	Na^+	K^+									
				(dS/m)	mg kg^{-1}	---------- $cmol_c\ kg^{-1}$ ----------								---------- % ----------				
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1		5.9	9.9	0.28	0.0	10.6	2.4	0.1	1.4	18.5		22.6		44		4.34	0.23	19
2		5.8	9.2	0.26	0.7	8.3	1.7	0.1	1.0	15.2		13.6		42		3.07	0.14	22
3		5.7	9.3	0.18	2.2	6.8	1.3	0.1	0.8	12.4		14.5		42		1.44	0.10	15
4		5.6	9.5	0.13	1.6	5.0	1.2	0.1	0.8	11.2		11.7		39		0.75	0.07	11
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CHEMICAL DATA (cont.):

Lab No.	Sat. Paste H_2O	Saturated Paste Extract – Soluble Ions								SAR[7]	Gypsum	$CaCO_3$	P Ret.	CBD		Pyro.		AOD			
		Ca^{2+}	Mg^{2+}	Na^+	K^+	CO_3^-	HCO_3^-	Cl^-	SO_4^{2-}					Fe	Al	Fe	Al	Fe	Al	Si	P
	%	---------- $cmol_c\ kg^{-1}$ ----------									-------- **%** -------		%	---------- **%** ----------							
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1	91													0.95	0.18	0.10	0.09				
2	46													0.98	0.16	0.10	0.08				
3	38													1.15	0.17	0.09	0.05				
4	36													1.19	0.16	0.06	0.04				
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1 Coarse fragments (>2mm) = (wt. coarse fragments >2mm / wt. soil + coarse fragments)*100
Note: This includes gravels, stones, & cobbles, if information is available.

2 Available phosphorus was extracted with 0.7M sodium acetate pH 4.8.

3 Extractable cations (NH_4OAc_{pH7}) – soluble cations (saturated paste extract) = exchangeable cations Note: units are meq/100g or $cmol_c\ kg^{-1}$
If there are not any soluble cations assume extractable cations are exchangeable.

4 ECEC = Sum of bases + extractable Al^{3+}

5 Base Sat % = (sum of bases/sum of bases + H^+)*100 or (sum of bases/ECEC)*100 or (sum of bases/$CEC_{pH\ 7}$)*100

6 ESP = exchangeable sodium percent = (Exchangeable $NH_4OAc_{pH\ 7}$ $Na^+/CEC_{pH\ 7}$)*100

7 SAR = sodium adsorption ratio = $[Na^+]\ /\ (([Ca^{2+}] + [Mg^{2+}])/2)^{1/2}$ Note: conc. are in meq/L

Note: $NH_4OAc_{pH\ 7}$ = NH_4OAc at pH 7.0
$CEC_{pH\ 7}$ = CEC at pH 7.0
$CEC_{pH\ 7}$ solutions were obtained by leaching soil with 10% acidified NaCl. Solutions were analyzed by steam distillation, Technicon Autoanalyzer or by Lachat Quikchem autoanalyzer for N-NH_4.
Nitrogen and CEC were run on the Technicon Autoanalyzer.
Rock is not accounted for in analyses unless noted on the data sheets.
Soil fraction = wt. of soil (g) / wt. of soil + coarse fragments >2mm (g)
A soil without rock (>2mm) would have a soil fraction of 1.